

# **Installation and operating instructions**

Compact wall scanners  
ES314.0001U

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# 1 Introduction

## About these instructions

These instructions contain important information and instructions for installation operation of the eLOCK eXpress Compact wall scanner.

- Read through the instructions carefully before starting the installation work and putting into service.
- Keep the instructions in a safe place and pass them on to each subsequent user of the compact wall scanner.

## Explanation of the symbols and signal words used

|                                                                                           |                                                                                     |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  WARNING | Indicates hazards which could result in severe or fatal injuries.                   |
|  CAUTION | Indicates hazards which could result in minor or moderate injuries.                 |
| CAUTION                                                                                   | Indicates hazards which could result in damage to property.                         |
| Note                                                                                      | Indicates information and tips for optimum use of the instructions and the product. |

## Target group

Faultless and safe function of the compact wall scanner largely depends on proper installation.

These instructions are therefore directed at competent personnel, who have completed suitable training or have experience appropriate for installation, maintenance, care, disposal and maintenance of wall scanners or comparable products.

## OPERTIS Support

If you have any questions which are not answered by the information provided in these instructions, please contact

OPERTIS GmbH  
Prof.-Bier-Straße 1-5  
D-34454 Bad Arolsen

Tel.: +49 5691 87741-200  
Fax: +49 5691 87741-281  
Email: [support@opertis.de](mailto:support@opertis.de)

**Up-to-date information**

All details of the product, images, dimensions and versions are correct at the time of delivery of the product. We reserve the right to make changes in line with technical progress and the resulting continuous improvement process of our products.

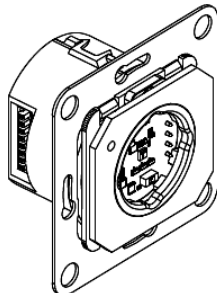
The current version of these instructions and further information is also available on our internet site [www.opertis.de](http://www.opertis.de).

Dated 12/2014

## 2 Product Description

**Overview**

These instructions describe the following controller:

| Art. No. / Name                      | Drawing                                                                              |
|--------------------------------------|--------------------------------------------------------------------------------------|
| ES314.0001U<br>Compact wall scanners |  |

## Operating principle

The OPERTIS eLOCK eXpress locking system ensures continuous, consistent fitout of a building. Special terminal devices are available for different door types.

The Compact wall scanner can be combined with different OPERTIS cover caps and housings and operated with an external power supply or PoE.

The Compact wall scanner consists of a UP controller and an antenna. Therefore, no other antenna is required. However, it is possible to connect up to 3 other antennas to the compact wall scanner.

Interfaces are available for controlling external relays or peripheral devices.

The management and programming of the terminals, including the issue of access authorisations, is carried out using the eLOCK eXpress management software.

Various types of passive transponders without their own power supply, such as key fobs and cards or customer-specific types are available in the eLOCK locking system for authorisation at the terminals. These must be held in front of the antenna for authorisation checking.

## Signalling

The signalling of the terminals depends on the settings in the eLOCK eXpress software. Optical signalling is switched on by default. A buzzer can be switched on optionally for the acoustic signalling.

The additional power consumption for the buzzer reduces the number of locking cycles that can be achieved by battery-operated terminals.

## Detailed Information

Further information on the product is given in Section 11 "Product specification".

## 3 Intended Use

### Area of use

The compact wall scanner is designed to control peripheral devices, for example, electric door openers, electric locks, motorised bars, holding magnets, electrical door and gate drives, barriers, lifts, letter boxes, etc.

The compact wall scanner is suitable for installation in flush-mounted boxes in the protected interior of the building (surface-mounted installation is also possible with special spacer frames).

### Combinations of the wall scanner products:

#### Note

The protected outdoor area is an area which is free from splashed water in all directions.

| Product                                                                                                                 | Area of use                                                |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>TS controller / UP controller</b>                                                                                    | Suitable for use in the protected indoor area.             |
| <b>Antenna</b> in conjunction with<br>- cover cap 80x80<br>- Spacer frame, low (optional)                               | Suitable for use indoors or in the protected outdoor area. |
| <b>Antenna</b> in conjunction with<br>- cover cap 80x80<br>- Spacer frame IP65                                          | Suitable for use outdoors.                                 |
| <b>Antenna</b> in conjunction with<br>- cover cap 55x55                                                                 | Suitable for use indoors or in the protected outdoor area. |
| <b>Siedle antenna</b> in built-in frame of a Siedle Vario or Compact series door intercom system                        | Degree of protection to EN 60529 IP54                      |
| <b>UP controller / Compact wall scanner</b> in conjunction with<br>- cover cap 80x80<br>- Spacer frame, high (optional) | Suitable for use indoors or in the protected outdoor area. |
| <b>UP controller / Compact wall scanner</b> in conjunction with<br>- Surface-mounted (on wall) housing IP65             | Suitable for use outdoors.                                 |

| Product                                                                                                                      | Area of use                                                |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>UP controller / Compact wall scanner</b> in conjunction with<br>- cover cap 55x55                                         | Suitable for use indoors or in the protected outdoor area. |
| <b>Compact wall scanner</b><br>If using the individual antenna and UP controller components, refer to the information above. |                                                            |

## Condition of the product

Compact wall scanners may only be used if they are in faultless technical condition.

Independent modifications and changes to the product are not allowed.

## Ambient conditions

- Use in particularly harsh environments with conditions such as aggressive gases or extreme temperatures is not allowed.
- Note!  
In general, avoid laying the cables in the immediate vicinity of noise sources. Always use a shielded cable in ambient conditions with EMC disturbance. To ensure reliable shielding it is advisable to terminate the control shielding to GND.

If you have any questions, please contact OPERTIS Support.

## Residual Risk

If used as intended and in compliance with the maintenance instructions, this product will help to maintain your property security.

However, the following residual risks cannot be excluded:

- If the mains voltage fails there is a risk of being locked in or out. In this case it is only possible to open the door using mechanical tools. Especially if installed in escape routes, ensure that they can be passed through at all times.
- If the electronics fail there is a risk of being locked in or out. It is then only possible to open the door using mechanical tools. In this case, contact OPERTIS support.
- If a compact wall scanner is used for access control to a fuse box there is a risk of being locked in or out if a fuse is defective. It is then only possible to open the door using mechanical tools.
- OPERTIS recommends the use of an uninterruptible power supply (UPS) to ensure operation of the Compact wall scanner during a power failure and to ensure operation of the connected devices, for example, door openers.

## 4 Safety Instructions

The following safety instructions must be noted and followed before use! OPERTIS does not accept any liability whatsoever for personal injuries or damage to property caused by failure to follow these instructions!



### **WARNING**

#### **Risk of personal injuries and damage to property**

There is an increased risk of injuries (electric shock!) if the compact wall scanner or the connection cables are touched while the power supply is switched on. The compact wall scanner and/or the connected peripheral device can be irreparably damaged.

Do not carry out any installation or maintenance work unless the power supply is switched off.

Note and follow the VDE guidelines (VDE-0100)!



### **CAUTION**

#### **Risk of personal injuries and damage to property**

Risk of fire due to overheating of the E-opener. If activated by the fire service transponder, the E opener is actuated continuously. If E-openers are used, they must be designed for continuous actuation.



### **CAUTION**

#### **Risk of being locked in or out**

Peripheral devices cannot be controlled without a functional compact wall scanner.

During installation of the wall scanner it is necessary to ensure that the systems controlled by the compact wall scanner do not obstruct anyone at the passage/entrance.



### **CAUTION**

#### **Risk of malfunctions**

Malfunctions can occur if the compact wall scanner is installed in the immediate vicinity of alternating electromagnetic fields (e.g. transformers, MRI scanners, etc.) and transmission equipment.

Before installing, check whether any of the above-mentioned interference factors could affect the function of the compact wall scanner.

**CAUTION****Risk of personal injuries**

The compact wall scanner is fitted with an LED which has a very bright light. If the compact wall scanner is supplied with voltage without a cover cap in front of the antenna the LED can dazzle. Do not look directly into the light of the LED.

**CAUTION****Risk of manipulation**

When using a compact wall scanner, if the controller is removed the exposed connection cables can switch the peripheral device.

Compact wall scanners should not be used for security-relevant applications. Instead a controller (ES314.1000U/ES314.1000T) should be installed in the secured interior and an antenna (ES314.2000/ES314.2001) installed on the security relevant access side.

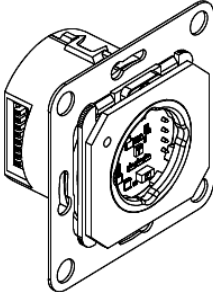
**CAUTION****Risk of damage to property**

Electronic components can be irreparably damaged if touched.

Note and follow the regulations and instructions in the EN 61340-5-1 standard!

## 5 Scope of supply

The scope of supply includes the following parts:

| Part                                                                                | Name                                 |
|-------------------------------------------------------------------------------------|--------------------------------------|
|  | Compact wall scanners<br>ES314.0001U |
|                                                                                     | Unlocking tool                       |

## 6 Installation

### Overview

The installation is divided into the following activities:

- Connecting the cables
- Functional test

### CAUTION

#### Unauthorised access following installation

In the as-delivered condition, the compact wall scanner is in construction site mode. Access is possible with any OPERTIS transponder, even if not programmed.

Immediately following installation you should program the authorisations to prevent unauthorised access; refer to the eLOCK eXpress Quick Start Guide. Have the date and time reset, if necessary by your eLOCK eXpress trade partner.

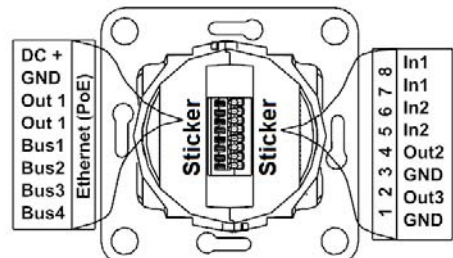
### Installation Tools Required

You will need the following tools for the installation:

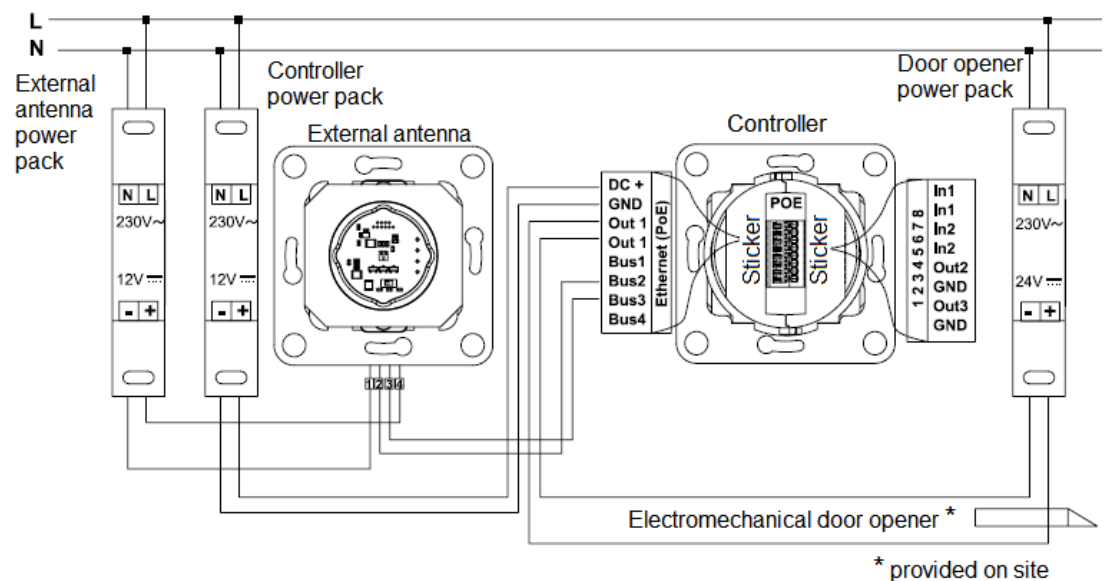
- Suitable screwdriver for installing screws available on site.
- Cable strippers or side cutters for stripping off the insulation and shortening the connection cable.

## Connecting the cables

Proceed as follows:

| Step | Activity                                                                                                                                            | Figure                                                                                                                        |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| 1    | All the necessary connection cables are connected to the UP controller, see "Pin Assignment" table“:                                                | Rear view of the compact wall scanner:<br> |
| 2    | The remaining installation sequence is described in the respective installation instructions of the wall scanner cover or the wall scanner housing. |                                                                                                                               |
| 3    | The installation and connection of external components (e.g. external antenna) are described in the respective installation instructions.           |                                                                                                                               |

## Connection diagram



**Pin assignment**

| <b>Connection</b> | <b>Description</b>                              |
|-------------------|-------------------------------------------------|
| DC+               | Power supply +                                  |
| GND               | Power supply -                                  |
| Out1              | Relay 1 (NO contact) maximum 60V 1.6A           |
| Out1              | Relay 1 (NO contact) maximum 60V 1.6A           |
| Bus 1             | Connection of external devices, VCC for antenna |
| Bus 2             | Connection of external devices, RS 485 bus      |
| Bus 3             | Connection of external devices, RS 485 bus      |
| Bus 4             | Connection of external devices, GND for antenna |
| In 1              | Not used                                        |
| In 1              | Not used                                        |
| In 2              | Not used                                        |
| In 2              | Not used                                        |
| Out 2             | Not used                                        |
| GND               | Not used                                        |
| Out3              | Not used                                        |
| GND               | Not used                                        |

| <b>Connection</b> | <b>Description</b> |
|-------------------|--------------------|
| 8                 | PoE                |
| 7                 | PoE                |
| 6                 | PoE                |
| 5                 | PoE                |
| 4                 | PoE                |
| 3                 | PoE                |
| 2                 | PoE                |
| 1                 | PoE                |

## Functional test



### CAUTION

#### Risk of being locked in or out

Peripheral devices cannot be controlled without a functional compact wall scanner.

During the functional test of the wall scanner it is necessary to ensure that the systems controlled by the compact wall scanner do not obstruct anyone at the passage/entrance.

### Note

If a compact wall scanner is controlled by other, external antennas, the functional test must be performed separately for each antenna.

Proceed as follows:

| Step | Activity                               | Result                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Switch on power supply.                | <ul style="list-style-type: none"> <li>○ Initialisation processes:<br/>The compact wall scanner sets up communication with the connected antennas, duration max. 15 seconds. Signalling to the antenna: fast red flashing, 1 short green flash.</li> <li>○ Standby mode:<br/>Compact wall scanner in standby state. Signalling to the antenna: slow red flashing, relay has not picked up.</li> </ul>                       |
| 2    | Hold any OPERTIS transponder in front. | <ul style="list-style-type: none"> <li>○ Compact wall scanner's relays pick up, signalling to the antenna: 2 short red-green flashes and a short, high tone.<br/>Example: Activated door opens.</li> <li>○ After the connection time has expired:<br/>Relay of the compact wall scanner drops out again. Signalling to the antenna: Short red flashing and short, high tone.<br/>Example: Activated door closes.</li> </ul> |

## 7 Operation and Control

### Programming Terminals and Transponders

Terminals and transponders are programmed using the eLOCK eXpress management software.

### Optical and acoustic signals

#### Note

The signalling of the terminals depends on the settings in the eLOCK eXpress software. Optical signalling is switched on by default. A buzzer can be switched on optionally for the acoustic signalling.

All optical and acoustic signals are given in the eLOCK eXpress system documentation.

In case of certain system states and events the wall scanner emits acoustic and/or optical signals:

| Optical signal                     | Meaning                                                       |
|------------------------------------|---------------------------------------------------------------|
| 2x short blue-blue1x short green   | Programming with the ToDo card completed successfully.        |
| 2x short blue-blue2x short red-red | Programming with the ToDo card not completed successfully.    |
| 2x short blue-blue1x short red     | No programming job with the ToDo card exists for the terminal |
| repeated short blue                | Programming in progress with the NFC stick.                   |
| 2x short green-blue                | Use of the security card                                      |
| 2x short green-green               | Switching on of fitting by an authorised transponder.         |
| 2x short red-red                   | No switching on of fitting, transponder is not authorised.    |
| 2x short red-green                 | Switching on of fitting in construction site mode             |
| continuous short red               | Wall scanner is ready for use (standby)                       |
| 2x short red-red<br>4x long yellow | System error, contact sales partner                           |
| continuous short yellow            | The fire service transponder has been used.                   |

## 8 Maintenance, Cleaning and Care

Maintenance and cleaning may only be carried out by qualified personnel.

We do not provide any warranty whatsoever for damage caused by improper handling.

### Intervals

| Activity    | Interval |
|-------------|----------|
| Maintenance | 1 year   |

### Cleaning and Care

Care and cleaning are not necessary for the compact wall scanner.

### Maintenance



#### CAUTION

#### Risk of being locked in or out

Peripheral devices cannot be controlled without a functional compact wall scanner.

- During the functional test of the wall scanner it is necessary to ensure that the systems controlled by the compact wall scanner do not obstruct anyone at the passage/entrance.

The following functional tests are to be performed once a year, if necessary by the eLOCK eXpress trade partner:

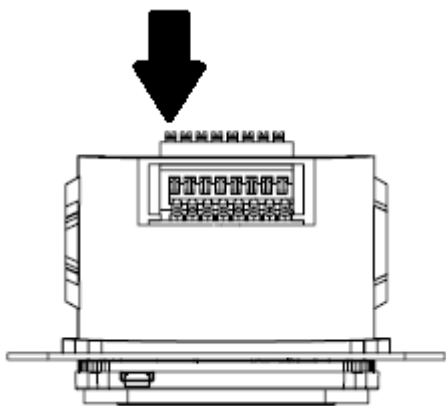
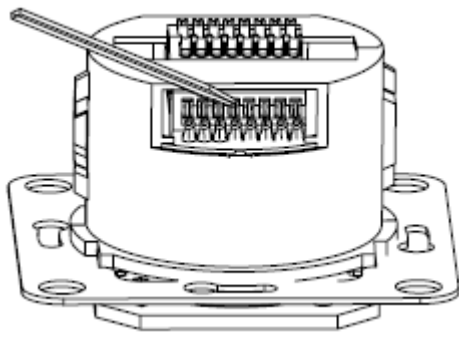
| Step | Activity                                                                               | Result                                                                                                                                                                  |
|------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Hold an authorised OPERTIS transponder in front of the connected compact wall scanner. | The connected peripheral device opens for the duration of the defined opening time. The antenna signals as described above, see "Acoustic and optical signals" section. |
| 2    | Reset the date and time.                                                               |                                                                                                                                                                         |

## 9 Dismantling

### Note

Dismantle in the reverse order.

Proceed as follows:

| Step | Activity                                                                                                                                  | Figure                                                                               |
|------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 1    | Dismantle the wall scanner cover or wall scanner housing, see separate installation instructions.                                         |                                                                                      |
| 2    | Remove connection cables of network (PoE):<br><br>Press respective button and remove the connection cable.                                |   |
| 3    | Remove remaining connection cables:<br><br>Insert the unlocking tool in the small slit above the connection cable and pull out the cable. |  |
| 4    | Remove the compact wall scanner from the flush-mounted box.                                                                               |                                                                                      |

## 10 Problems and Solutions

### Note

Problems and solutions that can occur during or due to connected components (e.g. antennas) are described in the respective installation instructions.

| Problem                                                                  | Possible cause                                                 | Solution                                             |
|--------------------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|
| Transponder is not recognised (no positive or negative acknowledgement). | Transponder is defective.                                      | Replace transponder.                                 |
|                                                                          | Compact wall scanner is defective                              | Replace the compact wall scanner                     |
| Peripheral device does not respond.                                      | Relay of the compact wall scanner is defective.                | Replace the compact wall scanner.                    |
|                                                                          | Peripheral device has no power supply.                         | Switch on the power supply of the peripheral device. |
|                                                                          | Peripheral device is connected incorrectly.                    | Correct connection.                                  |
|                                                                          | Peripheral device is defective.                                | Replace peripheral device.                           |
|                                                                          | Connection cables are defective.                               | Replace connection cables.                           |
| Antenna has no ready signal.                                             | Power supply is defective or not connected.                    | Ensure power supply.                                 |
|                                                                          | Connection cable to the antenna is defective or not connected. | Ensure connection to the antenna.                    |
|                                                                          | Operating voltage not within the allowable range.              | Connect correct power supply (voltage).              |
|                                                                          | Compact wall scanner is defective.                             | Replace the compact wall scanner.                    |
|                                                                          | Antenna of the compact wall scanner is defective.              | Replace the compact wall scanner.                    |
|                                                                          | External antenna is defective.                                 | Replace antenna.                                     |
|                                                                          | Relay has already picked up.                                   | Wait for the relay to drop out.                      |

| Problem                                                                                                        | Possible cause                                                              | Solution                                                                                     |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Transponder obtains no access                                                                                  | Transponder is not programmed or does not have the necessary authorisations | Program the transponder.                                                                     |
|                                                                                                                | Compact wall scanner has wrong date or wrong time.                          | Reset the date and time.                                                                     |
| Faulty data transmission with the NFC stick or the ToDo card? Error during authorisation with the transponder. | Insufficient shielding of the connection cable to the antenna.              | Use shielded cables and terminate the shield on connection4 GND of the compact wall scanner. |
| Each transponder is authorised for the lock.                                                                   | Compact wall scanner is not programmed ("construction site mode").          | Program the compact wall scanner, see eLOCK eXpress Quick Start Guide.                       |
| Reset on authorisation or authorisation check.                                                                 | Too much consumption in demand/backlog at the bus. (For supply through POE) | Secure power supply for the antennas from elsewhere.                                         |
| No optical or acoustic signalling at the terminal.                                                             | Signalling has been switched off in the eLOCK eXpress software.             | Switch on signalling in the software.                                                        |

# 11 Product Specification

## Declaration of Conformity

### Konformitätserklärung gemäß dem Gesetz über Funkanlagen und Telekommunikationsendeinrichtungen (FTEG) und der Richtlinie 1999/5/EG (R&TTE)

Declaration of Conformity in accordance with the Radio and Telecommunications Terminal Equipment Act (FTEG) and Directive 1999/5/EC (R&TTE Directive)

#### Hersteller

The manufacturer

OPERTIS GmbH

#### Anschrift

Address

Prof.-Bier-Straße 1-5

34454 Bad Arolsen

Deutschland/Germany

#### erklärt, dass das Produkt

declares that the product

Wandleser System

ES314.1000T

ES314.1000U

ES314.2000

ES314.2001

ES314.0001U

#### Type

Type

Funkanlage

Radio equipment

#### Verwendungszweck

Intended purpose

Identifikation RFID (13,56MHz)

#### Gerätekategorie

Equipment class

Class-1

bei bestimmungsgemäßer Verwendung den grundlegenden Anforderungen des § 3 und den übrigen einschlägigen Bestimmungen des FTEG (Artikel 3 der R&TTE) entspricht.

complies with the essential requirements of §3 and the other relevant provisions of the FTEG (Article 3 of the R&TTE Directive), when used for its intended purpose.

#### Gesundheit und Sicherheit gemäß § 3 (1) 1. (Artikel 3 (1) a))

Health and safety requirements pursuant to § 3 (1) 1. (Article 3(1) a))

|                                                                      |                                                                                                                                                                                                                         |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| angewendete harmonisierte Normen:<br>Harmonised standards applied... | Einhaltung der grundlegenden Anforderungen auf andere Art und Weise (hierzu verwendete Standards/Spezifikationen)<br>Other means of proving conformity with the essential requirements (standards/specifications used). |
| EN 50364: 2010<br>EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011    |                                                                                                                                                                                                                         |

## Schutzanforderungen in Bezug auf die elektromagn. Verträglichkeit § 3 (1) 2, Artikel 3 (1) b))

Protection requirements concerning electromagnetic compatibility § 3(1)(2), (Article 3(1)(b))

|                                                                      |                                                                                                                                                                                                                         |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| angewendete harmonisierte Normen:<br>Harmonised standards applied... | Einhaltung der grundlegenden Anforderungen auf andere Art und Weise (hierzu verwendete Standards/Spezifikationen)<br>Other means of proving conformity with the essential requirements (standards/specifications used). |
| ETSI EN 301 489-3 v 1.4.1                                            |                                                                                                                                                                                                                         |

## Maßnahmen zur effizienten Nutzung des Funkfrequenzspektrums

Measures for the efficient use of the radio frequency spectrum

## Luftschnittstelle bei Funkanlagen gemäß § 3(2) (Artikel 3(2))

Air interface of the radio systems pursuant to § 3(2) (Article 3(2))

|                                                                      |                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| angewendete harmonisierte Normen:<br>Harmonised standards applied... | Einhaltung der grundlegenden Anforderungen auf andere Art und Weise (hierzu verwendete Standards/Schnittstellenbeschreibungen)...<br>Other means of proving conformity with the essential requirements (standards/interface specifications used)... |
| ETSI EN 301 330-1 v 1.7.1<br>ETSI EN 301 330-2 v 1.5.1               |                                                                                                                                                                                                                                                     |

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info@opertis.de

Bad Arolsen, 2014-05-12

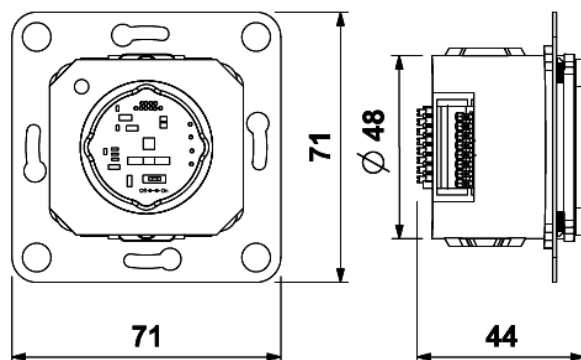
Ort, Datum

Place & date of issue

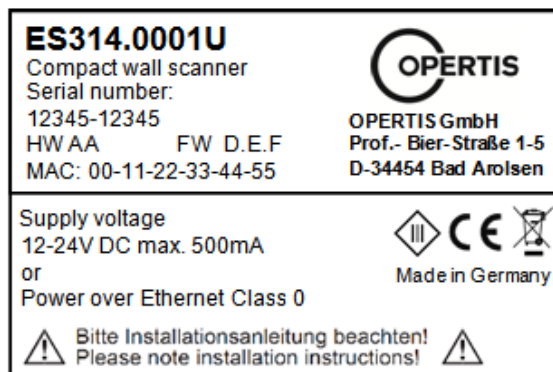
  
**Andreas Steinkamp**  
 Geschäftsführer / CEO  
 Name und Unterschrift  
 Name and signature

## Dimensions

All dimensions given in mm.



## Rating plate



## Note on the Operating System

The compact wall scanner is operated with the FreeRTOS operating system. Further information under: [www.freertos.org](http://www.freertos.org)

## Technical data

### Installation environment

|                                        |                                                                   |
|----------------------------------------|-------------------------------------------------------------------|
| Installation depth                     | ≥ 44 mm                                                           |
| Installation diameter                  | ≥ 53 mm or standard flush-mounted boxes with 60 mm fixing spacing |
| Installation distance between antennas | at least 100 mm in 3D space                                       |

### Power supply / connections

|                                            |                                                                                                                                                                                                                                                                 |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power supply                               | <p>Automatic detection:</p> <ul style="list-style-type: none"> <li>● 12 - 24 V DC unstabilised +/-10% or</li> <li>● PoE</li> </ul> <p>The compact wall scanner must be supplied from an electricity source with limited power according to EN 60950-1:2001.</p> |
| Antennas                                   | <ul style="list-style-type: none"> <li>● A maximum of 3 external antennas can be connected to one compact wall scanner.</li> </ul>                                                                                                                              |
| Length of the connection cable of antennas | ≤ 300m (connected in series)                                                                                                                                                                                                                                    |
| Power consumption                          | <p>Depending on the number of antennas connected:</p> <p>0 externally connected antennas: 1.8 W</p> <p>1 externally connected antenna: 2.0 W</p> <p>2 externally connected antennas: 2.2 W</p> <p>3 externally connected antennas: 2.4 W</p>                    |

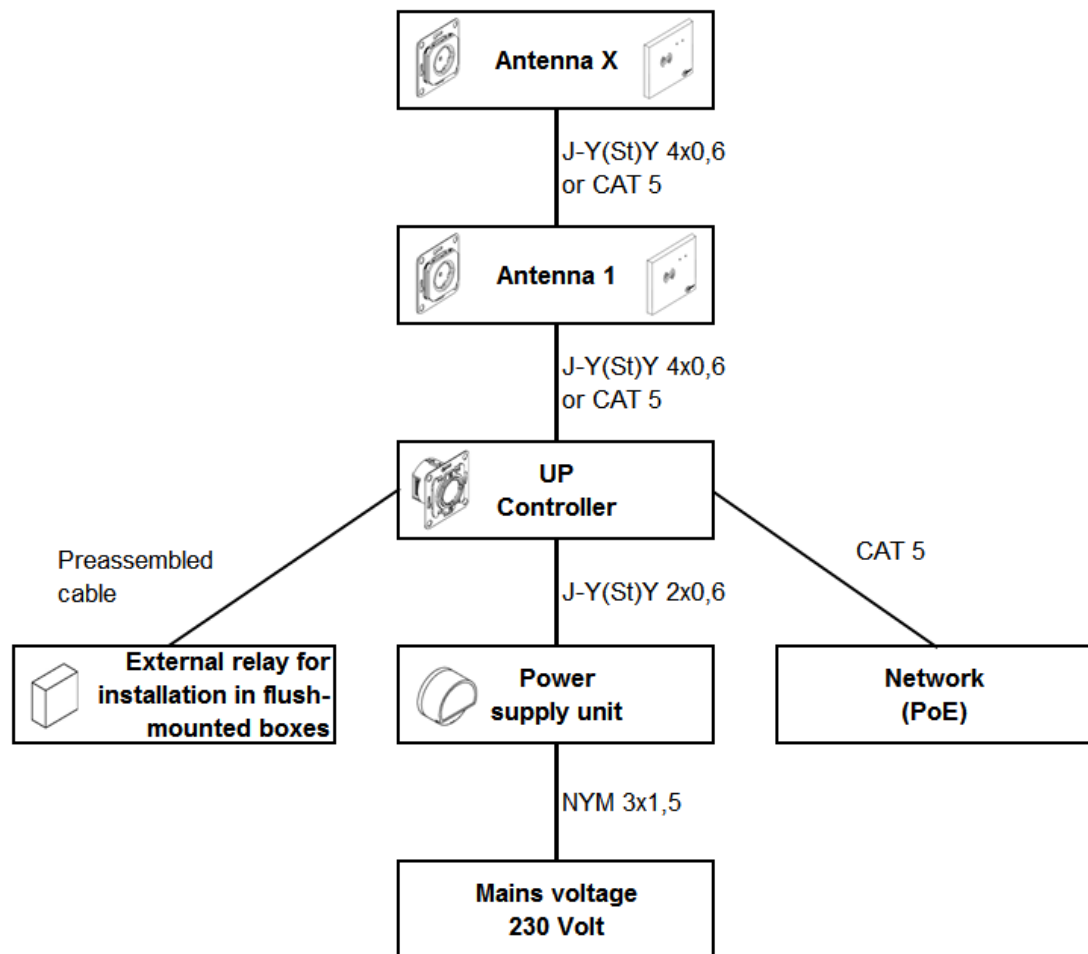
|                          |                                                                                                                                                                                           |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interfaces               | <ul style="list-style-type: none"> <li>○ Connection for antennas</li> <li>○ Connection for an LAN network</li> <li>○ Connection for control of external relays</li> </ul>                 |
| Outputs                  | <ul style="list-style-type: none"> <li>○ 1 relay output (Photomos, NO contact)</li> <li>○ Control of the external relay ES0532U with two electromechanical changeover contacts</li> </ul> |
| Contact rating           | Relay contact/NO<br>max. 60 V AC/DC / 1,6 A                                                                                                                                               |
| Connection cable         | Single wire 0.24 - 1.5mm <sup>2</sup> Stripped length 6.0 - 9.0mm<br>For details, see "Cable diagram" section.                                                                            |
| Network connection cable | Single wire 0.14-0.5mm <sup>2</sup><br>Stripped length 9.0mm                                                                                                                              |
| Pin assignment           | see Section 6: "Installation"                                                                                                                                                             |

**Specific data**

|                                    |                         |
|------------------------------------|-------------------------|
| Operating temperature              | -20 °C to +55 °C        |
| Storage temperature                | -40 °C to +85 °C        |
| Humidity for operation and storage | max. 95% non-condensing |
| Degree of protection to EN 60529   | IP20                    |

### Cable plan

The defined cable types are not a mandatory specification, merely a recommendation.



## 12 Disposal

### Product



Disposal in accordance with WEEE Directive 2012/19/EC:

- Do not dispose of product in the local household waste.
- Send product back to OPERTIS or dispose of it at a communal collection point for hazardous electronic wastes.

### Product packaging

The product packaging must be disposed of through the local household or paper waste collection facility.

### Notes:



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